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# **Notice of Allowability**

Application No.

10/653,651

Examiner

Sudhanshu C. Pathak

Applicant(s)

MIAO, GEORGE J.

Art Unit

2611

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to May 31<sup>st</sup>, 2007.
2. ☒ The allowed claim(s) is/are 1, 3-17 & 20 and re-numbered as claims 1-17 respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## **Attachment(s)**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
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### DETAILED ACTION

1. Claims 1, 3-17 & 20 are pending in the application.
2. Claims 2 & 18-19 have been canceled.

### EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with George J. Miao on June 13<sup>th</sup>, 2007.

- In order to avoid art and 112 rejections, the claims have been canceled as follows:

➤ In Claim 1, lines 21-22 **replace** "...polyphase-based multiband;..."

**with**

"...polyphase-based multiband; wherein said polyphase-based multiband includes a random access memory (RAM) bank with a length size of N for storing serial input data and P RAM banks with a length size of N/P for storing parallel output data, where N, and P are integers and greater than 1, N is greater than P, and N/P is an integer;..."

➤ In Claim 3, line 3 **replace** "...claim 2..."

**with**

"...claim 1..."

- **Cancel Claim 2**
- **In Claim 17, lines 13-14 replace "...where N is an integer and greater than 1..."**

**with**

"...wherein said N base station antennas of the MIMO-based multiuser OFDM multiband of UWB base station communication transmitter and receiver are programmable and further wherein the fourth and/or fifth base station antennas can be turned off to avoid interference with wireless local area network (WLAN) devices, where N is an integer and greater than 5..."

- **Cancel Claims 18-19.**

***Allowable Subject Matter***

4. Claims 1, 3-17 & 20 are allowed.
5. Claims 1, 3-17 & 20 and re-numbered as claims 1-17 respectively are allowable over the prior art of record because the cited reference do not contain the specified limitation of a multiple-input multiple-output (MIMO) based multiuser orthogonal frequency division multiplex (OFDM) multiband of ultra wideband (UWB) base station communication transmitter comprising: p user bitstream coupled to p convolution encoders, where p is an integer and greater than 1; said p convolution encoders coupled to p interleavers; p outputs of said p interleavers spread out by p user keys to form an encoded sequence by a sum over a block;

each of said  $p$  user keys is a unique and orthogonal each other; said sum over a block coupled to a polyphase-based multiband; wherein said polyphase-based multiband includes a random access memory (RAM) bank with a length size of  $N$  for storing serial input data and  $P$  RAM banks with a length size of  $N/P$  for storing parallel output data, where  $N$ , and  $P$  are integers and greater than 1,  $N$  is greater than  $P$ , and  $N/P$  is an integer; said polyphase-based multiband coupled to  $k$  serial-to-parallel (S/P), where  $k$  is an integer and greater than 1; said  $k$  S/P coupled to  $k$  inverse fast Fourier transforms (IFFTs); said  $k$  IFFTs coupled to  $k$  guards; said  $k$  guards coupled to  $k$  filtering and spreading units; said  $k$  filtering and spreading units coupled to a MIMO-based multiband and multicarrier radio frequency (RF) unit; and said MIMO-based multiband and multicarrier RF unit coupled to  $k$  antennas.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)-272-3042.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner  
Art Unit 2611



CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER